	Application No.	**Applicant(s)**
Notice of Allowability	10/800,848	BIEGELSEN, DAVID K.
	Examiner	**Art Unit**	
	FATIMAT O. OLANIRAN	2614	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address--*

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *3/3/2010.*

2. ☒ The allowed claim(s) is/are *1,3-6,8-11 and 13-25.*

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

          1. ☐ Certified copies of the priority documents have been received.

          2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

          3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of
        Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08),
    Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit
    of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413),
    Paper No./Mail Date *20100308* .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DETAILED ACTION

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be

submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview

with Mr. Ramaswamy on March 15 2010

The application has been amended as follows:

Claim 1 recites:

A method for processing hypersonic signals performed by a hypersonic signal-emitting

device, comprising: generating a signal; and

forming a plurality of individual transducer outputs of the signal at a plurality

of phases,

the outputs having a common frequency and amplitude,

the individual transducer outputs generating wavelets originating at a common origin

with reference to a first axis, and

the plurality of phases being generated using electronic delays; forming a plurality of

focused hypersonic beams based on the wavelets; receiving a plurality of reflected

hypersonic signals;

simultaneously detecting a plurality of objects based on the plurality of reflected

hypersonic signals;

learning, based on the plurality of reflected hypersonic signals, sets of transmission

parameters that are sets of phases for optimally steering and focusing the hypersonic

beams in order to <u>focus</u> (maximize) transmission of the hypersonic beams and audible

power to the plurality of objects, the learning including associating a set of transmission

parameters with each of a plurality of detected objects, storing the sets of transmission

parameters and computing a resultant set of transmission parameters based on the

stored sets of transmission parameters; generating the plurality of hypersonic wavelets

based on the resultant set of transmission parameters associated with a plurality of

neighborhoods for the hypersonic beams; and transmitting audio information to the

plurality of objects detected at locations corresponding to the neighborhoods based on

the resultant set of transmission parameters.

Claim 11 recites:

An apparatus that processes hypersonic signals, comprising: a memory; a plurality of

transducer elements formed into a transducer element array, the transducer elements

all having a common position with reference to a first axis; a driver that drives the

transducer elements with a signal at a plurality of phases, the driver having a delay

processor that forms the phases of the signal causing the transducer element array to

form a focused hypersonic beam; a detector that simultaneously detects a plurality of

objects based on echo signals received by the transducer element array;

a device that learns, based on the echo signals, sets of transmission parameters

that are sets of phases for optimally steering and focusing the hypersonic

beams in order to <u>focus</u> (maximize) transmission of the hypersonic beams and audible

power to the plurality of objects, the learning including associating a set of transmission

parameters with each of the plurality of detected objects, storing the sets of

transmission parameters in a memory and computing a resultant set of transmission

parameters based on the stored sets of transmission parameters; and a signal

generator that generates an output signal to encode audio information for transmission

to each of the plurality of objects based on the resultant set of transmission

parameters.

Allowable Subject Matter

1.   Claim 1, 3-6, 8-11, 13-25 are allowed.

2.   Claims 1 and 11 are the independent claims;

3.   The following is a statement of reasons for the indication of allowable subject

matter: hypersonic arrays for scanning and beam forming are well known in the art as

evidenced by Pompei (2001/0007591), Tanigawa (4896304), and Li (5986972). In

addition directional arrays for producing an audible beam are well known in the art as

evidenced by Manabe (6556687).

4.   However examiner could not find art that teaches or provides a reason to

combine: the limitations of claim 1, 11:

"….learning, based on the plurality of reflected hypersonic signals, sets of

transmission parameters that are sets of phases for optimally steering and

focusing the hypersonic beams in order to focus transmission of the hypersonic beams

and audible power to the plurality of objects, the learning including associating a set of

transmission parameters with each of a plurality of detected objects…"

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to FATIMAT O. OLANIRAN whose telephone number is

(571)270-3437. The examiner can normally be reached on M-F 10:00-6 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FO

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2614